

1792A
EA-02-03
Calapooya

March 6, 2002

Concerned Citizen,

The McKenzie Resource Area of the Eugene District Bureau of Land Management has completed the Environmental Assessment (EA) and Finding of No Significant (FONSI) for forest management activities in the Calapooya Watershed located in Sections 31 and 33, T. 14 S., R. 1 W.; Sections 28, 33 and 34, T. 14 S., R. 2 W. and Sections 1, 5 and 9, T. 15 S., R. 1 W., Will. Mer.

You have expressed an interest in receiving copies of Environmental Assessments for district projects. Enclosed is a copy of the Environmental Assessment for your review and any comments. Public notice of this proposed action will be published in the Eugene Register Guard on March 6, 2002. The EA will also be available on the internet at <http://www.edo.or.blm.gov/nepa>. The public comment period will end on April 5, 2002. Please submit comments to me at the district office, by mail or by e-mail at OR090mb@or.blm.gov by close of business (4:15 p.m.) on or prior to April 5, 2002. If you have any questions concerning this proposal, please feel free to call Jack Zwiesler at 683-6497.

Comments, including names and street addresses of respondents, will be available for public review at the district office, 2890 Chad Drive, Eugene, Oregon during regular business hours (7:45 a.m. to 4:15 p.m.), Monday through Friday, except holidays, and may be published as part of the EA or other related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Sincerely,

Emily Rice, Field Manager
McKenzie Resource Area

Enclosure

CALAPOOYA PROJECT
ENVIRONMENTAL ASSESSMENT
No. OR 090-EA-02-03

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Calapooya Project
Environmental Assessment No. OR 090-EA-02-03

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

The Bureau of Land Management (BLM) proposes to carry out forest management activities in the Calapooya Watershed approximately 20 miles northeast of Eugene, Oregon. This watershed is approximately 33,800 acres in size (BLM managed public land is about 7,700 acres or 23 percent of the area, and private land is about 26,100 acres or 77 percent of the area). The legal description for the proposed harvest activities is T. 14 S., R. 1 W., Sections 31 and 33; T. 14 S., R. 2 W., Sections 28, 33 and 34 and T. 15 S., R. 1 W., Sections 1, 5 and 9 of the Willamette Meridian. Refer to the attached maps for the project areas.

The proposed action involves a commercial thinning of 10 harvest areas totaling approximately 277 acres of Matrix lands and a thinning of six harvest areas totaling approximately 26 acres of Riparian Reserve. Also included would be the construction or improvement of 2.4 miles of road along with 5.5 miles of road closure. All adjacent Riparian Reserve areas retain interim widths for fish and aquatic habitats although some thinning would occur within reserves shown on the attached maps.

Timber harvesting would occur on land allocated as “Matrix” and “Riparian Reserve” in the Northwest Forest Plan and the 1995 Eugene District Resource Management Plan (RMP). Matrix lands are those Federal lands outside areas identified in the Record of Decision (ROD) for the FSEIS with special restrictions because of other resource values. Riparian Reserves are designated areas that include the riparian area and upland area within 200 feet from a stream, pond, wetland or water-related feature. Matrix lands are available for timber production and other silvicultural activities as long as the Standards and Guidelines included in the ROD are followed (U.S. Bureau of Land Management and U.S. Forest Service 1994, pp 7, 10, C-39). In order to meet the silvicultural objectives of the RMP and this proposal, BLM administered lands are being proposed for treatment.

1.2 Purpose and Need

The purpose of this action is to:

- Fulfill the BLM's mission and policy of providing wood products and jobs in the Matrix Land Use Allocations for Fiscal Year 2002.
- Manage Matrix lands by commercial thinning to capture mortality, reduce stocking density and redistribute growth and yield to the remaining stand.

- Improve the Riparian Reserves stand complexity, develop late seral characteristics and large woody debris for recruitment into the stream channel.
- Construct temporary roads for timber harvest.
- Manage the existing road network through improvement and/or road closure.

The need for harvest action is established in the Eugene District Record of Decision and Resource Management Plan, which directs that timber be harvested from Matrix lands to provide a sustainable supply of timber. The need for the road improvement action, and road closure actions are established in the Northwest Forest Plan (G-9 thru B-34) that directs that Aquatic Conservation Strategy Objectives be met. The ACS objectives are listed in Appendix A.

1.3 Conformance

The proposed action and alternatives are in conformance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl*, April 1994, and the *Eugene District Record of Decision and Resource Management Plan (RMP)*, June 1995 (*Eugene District ROD/RMP*) as amended by the *Record of Decision (ROD) for Amendment to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, January 2001. The analyses contained in these EIS's are incorporated into this document by reference.

The above referenced documents are available for review at the Eugene District Office or on the internet at <http://www.or.blm.gov/nwfp.htm>.

The Analysis File contains additional information used by the interdisciplinary team (IDT) to analyze impacts and alternatives and is hereby incorporated by reference.

1.4 Monitoring

Monitoring guidelines are established in the 1995 RMP/ROD, Appendix D, and the 1994 Northwest Forest Plan Standards and Guidelines, pp. E-1 to E-10.

1.5 Scoping

The scoping process identified both agency and public concerns relating to the proposed projects, and defined the issues and alternatives that would be examined in detail in the EA. The public was informed of the planned EA by the inclusion of this project in the Eugene District Planning Update "Eye to the Future," April 1999, February 2001 and June 2001.

Maps of the Proposed Action were sent to the Confederated Tribes of the Grand Ronde and Confederated Tribes of Siletz in 1999; no comments were received. Two public scoping letters were received; one from American Lands Alliance and one from Oregon Natural Resources Council. The public scoping letters contained several issues and concerns including developing an alternative where

no new roads are constructed. Alternative III was developed to address the no new roading concern. Other issues and concerns are listed in 1.6.3, Issues Considered But Eliminated From Further Analysis.

1.6 Identified Issues:

1.6.1 What would be the effect of timber harvesting and road management activities on water quality and T&E fish habitat? (Issue #1)

Indicators:

- Number of stream crossings constructed or removed.
- Road tilling designed to intercept road related runoff before it reaches the stream system.
- Amount of compacted soil surface and acres of road with infiltration characteristics restored.

1.6.2 What would be the effect of commercial thinning on stand structure and harvest volume? (Issue #2)

Indicators:

- Acres treated
- Timber Volume

1.6.3 Issues Considered But Eliminated From Further Analysis:

An issue concerning Roadless/Wilderness Areas: The proposed areas do not meet criteria for Roadless/Wilderness Areas and have not been designated as such.

Concerns of tractor yarding and constructing new landings: Attempting to develop an alternative where no new landings or new temporary roads are constructed limited the area treated to near the “No Action” alternative. Essentially, without developing new landings none of the proposed units could be harvested. This would not meet the needs of the action.

An issue of “Old Growth” protection: There are a few late seral trees (80+ years old) within or adjacent to the project areas. The silvicultural prescription is to thin the stands while leaving the late seral trees uncut. There may be instances where late seral trees may need to be cut such as trees in the skyline yarding corridors, or trees identified as safety hazards.

Another concern raised was the range of alternatives to include wildlife enhancement, restoration, old growth protection and non-motorized recreation. Action alternatives dealing with wildlife enhancement, restoration, old growth protection and non-motorized recreation were not analyzed because these alternatives would not meet the need of the

project proposal. Project Design features included in the project proposal are utilized to protect resources while not unduly restricting management activities.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section describes alternatives identified by the IDT, alternatives eliminated from detailed study and a comparison of alternatives. Project design features associated with these alternatives are located in Appendix B and detailed information can be found in the Calapooya Analysis file.

2.1 Alternative I - No Action

No forest management would occur within the Calapooya Project Area at this time. There would be no increase in the productivity of upland Matrix lands and no reduction in density in the overstocked Riparian Reserve areas. Meeting the District's timber harvest volume commitment would be accomplished in other areas.

Additionally, there would be no new construction of roads; there would also be no improvement nor renovation of existing roads. There would be no decrease in the miles of roads and some roads with erosion or sedimentation concerns would persist.

2.2 Alternative II - Proposed Action

This Alternative includes commercial thinning on 277 acres of Matrix lands and approximately 26 acres of riparian reserves. This would also include constructing approximately 1.7 miles of temporary road and renovate approximately 0.7 miles of existing road. After harvesting activities approximately 5.5 miles of road would be blocked and closed. The 5.5 miles of road closure includes the 1.7 miles of temporary road, the 0.7 miles of existing road renovation and 3.1 miles of existing road not needed for future management activities. See Appendix C, Glossary, for the definition of road closure.

Upland: The commercial thinning of these naturally regenerated Douglas-fir dominated stands would release from competition the dominant and co-dominant trees, which would encourage growth on the residual trees. Additionally, trees of all crown competition classes may be harvested within skid roads or skyline yarding corridors or in road rights-of-way, to facilitate the harvest operation. The silvicultural prescription would maintain a fully stocked stand with approximately 70-90 trees per acre. Additional information on the silvicultural prescriptions can be found in the Analysis file.

Riparian: The current condition in the Riparian Reserves is an overstocked mixture of conifer and hardwoods similar to or the same as the upland conditions. Tree growth and differentiation in these stands has slowed considerably. The purpose of thinning is to reduce stand density and competition allowing for improved growth in the remaining trees. The improved tree growth, both vertical and horizontal would result in accelerated development of late seral characteristics and large woody debris for recruitment in the active stream channels. Canopy openings created during the thinning operation would result in more light penetrating to the forest floor. This

increase light would encourage growth of more diverse ground cover and brush species. A no harvest buffer would be maintained for approximately 100 feet upslope from the stream or water feature. Approximately 70-90 trees per acre would be maintained after harvest activities.

See Appendix B for project design features specific to action alternatives.

Below is a summary of the proposed acres involved, volume of timber, road construction and road closure.

Table 1 **Summary, Alternative II**

Harvest Area No. Type of Yarding	Matrix Thin Acres	Riparian Thin Acres	Riparian Volume (MBF)	Total Volume (MBF)	(T) Road Construction (miles)	Road Improvement (miles)	Road Closure (miles)
Area No. 2 C/M	41	11	100	360	0	0.2	0.2
Area No. 3 C	12	3	10	120	0	0	0
Area No. 4 C/M	16	5	40	170	0.1	0	0.1
Area No. 5 C/M	44	0	0	350	0.5	0.1	0.6
Area No. 6 C/M	22	0	0	150	0.2	0	0.2
Area No. 7 C/M	83	5	55	990	0.7	0.4	1.9*
Area No. 9 C/M	59	2	32	975	0.2	0	2.5**
TOTAL	277	26	237	3115	1.7	0.7	5.5

MBF - Thousand board feet

C - cable yarding

M - machine yarding

T - temporary constructed road, to be closed after completion of timber sale contract

* - includes 0.8 miles of existing road

** - includes 2.3 miles of existing Road Nos. 14-2-28 and 14-2-28.1

2.3 Alternative III - No New Road Construction

In this Alternative only the harvest areas with existing roads would be treated at this time. Treatment of the dropped harvest areas would be deferred to a later time. Four harvest areas totaling approximately 91 acres would be treated, see Table 2. In addition two riparian areas of approximately 12 acres would be treated. Road closure would occur on approximately 1.9 miles of road. The silvicultural prescription and timber harvesting methods would be the same as the proposed action. See Appendix B for project design features specific to action alternatives.

Table 2 Summary of Alternative III

Harvest Area No., Type Yarding	Matrix Thin Acres	Riparian Thin Acres	Riparian Volume (MBF)	Total Volume (MBF)	(T) Road Construction (miles)	Road Improvement (miles)	Road Closure (miles)
Area No. 2 C/M	30	9	80	355	0	0.2	0.2
Area No. 3 C/M	12	3	10	40	0	0	0
Area No. 5 C/M	10	0	0	80	0	0.01	0.01
Area No. 9 C/M	39	0	0	625	0	0.6	1.7*
TOTAL	150	12	90	1100	0	0.81	1.91

MBF - Thousand board feet

C - cable yarding

M - machine yarding

T - temporary constructed road, to be closed after completion of timber sale contract

* - includes 1.7 miles of existing road Nos. 14-2-28 and 14-2-28.1 but not the 0.6 miles of improvement in Area No. 9.

2.4 Alternatives Considered but Eliminated

One alternative was considered where “no new” stream crossings would be constructed. During the ID Team review this alternative was dismissed because it closely resembled the Proposed Action. Due to Survey and Manage species being found in portions of the analysis area and the subsequent protection of these species, the anticipated number of stream crossing access roads were reduced to one crossing.

2.5 Post Harvest Activities

- **Site Preparation and Hazard Reduction** - Logging slash located within 25 feet of all existing all-weather roads that traverse the proposed harvest areas would be piled. Refer to Appendix B, Site Preparation/Hazard Reduction. Landing debris remaining after harvest and special forest product sales would be piled and burned consistent with Oregon smoke management regulations.
- **Road Closure** - In Alternative II, Proposed Action, all newly constructed temporary roads, existing Road Nos. 14-2-28, 14-2-28.1, 14-1-31, 14-1-31.1, 14-2-34, a portion of old Brush Cr. County road, two unnumbered roads near Harvest Area No. 7 and an unnumbered road in Harvest Area No. 9A would be closed. Twelve existing stream crossing culverts would be removed.

In Alternative III, only road No. 14-2-28.1 and a portion of road No. 14-2-28 would be closed. Six existing stream crossing culverts would be removed.

Refer to Appendix B, Road Closure, for project design features for closing roads and removing culverts.

2.6 Comparison of Alternatives

See Table 3 below for a comparison of the three alternatives.

Table 3

	Alternative I No Action	Alternative II Proposed Action	Alternative III No Road Const.
Total Thinning Acres	0	277	91
Acres of Riparian Thinning	0	26	12
Estimated Timber volume (MBF)	0	3,115	1,100
Amount of Temporary Road Construction (miles)	0	1.7	0
Road Renovation & Improvement	0	0.7	0.81
Road Closure	0	5.5	1.91

2.7 Summary of the Predicted Environmental Effects of All Alternatives.

Table 4

Issue	Alternative I	Alternative II	Alternative III
<p>What would be the effect of timber harvesting and road management activities on water quality and T&E fish habitat? (Issue #1)</p> <p>Indicators:</p> <p>-Number of stream crossings constructed or removed.</p> <p>-Road tilling designed to intercept road related runoff before it reaches the stream system.</p> <p>-Amount of compacted soil surface and acres of road with infiltration characteristics restored.</p>	<p>None constructed or removed. Existing sedimentation problems would continue and may affect downstream threatened fish species.</p> <p>No road improvements would be completed.</p> <p>The existing condition would persist.</p> <p>(See 4.1.1)</p>	<p>Remove 11 poorly functioning culverts plus install and remove a new culvert. Short term impacts to water quality at site, long term beneficial for sediment transport. Reduced risk of culvert failures.</p> <p>Tilling of new construction (1.7 miles) and existing roads (3.8 miles) not needed in the near future would reduce road related sediment from reaching streams.</p> <p>Approximately 21 acres restored.</p> <p>(See 4.2.1)</p>	<p>Remove 6 poorly functioning culverts. Effects similar to Alt. II.</p> <p>Till approximately 1.91 miles of existing road.</p> <p>Approximately 10.5 acres restored.</p> <p>(See 4.3.1)</p>
<p>What would be the effect of commercial thinning on stand structure and harvest volume? (Issue #2)</p> <p>Indicators:</p> <p>-Acres treated</p> <p>-Timber Volume</p>	<p>277 acres remain overstocked, maintains stress conditions.</p> <p>None</p> <p>(See 4.1.2)</p>	<p>277 acres Upland treated, 26 acres of Riparian treated reduces competition.</p> <p>3,115 MBF removed.</p> <p>(See 4.2.2)</p>	<p>91 acres treated in upland, 12 acres in Riparian Reserve.</p> <p>1,100 MBF removed.</p> <p>(See 4.3.2)</p>

3.0 AFFECTED ENVIRONMENTS

3.1 Vegetation:

Forest stands proposed for treatment are second growth forests, most of which arose from natural seeding following logging operations in the 1930's, 1940's and 1950's, with minor acreage of planting occurring in the youngest stands. Intensive timber management actions in many of these stands consisted of precommercial thinning in the mid 1970's and aerial fertilization with 200 pounds of nitrogen per acre in 1991. The common stand condition is a well-stocked overstory of Douglas-fir of low growth vigor due to density related competition for growing space and is approaching or experiencing some degree of competition mortality. Most of the stands have a few scattered large residual trees. Many of the older trees have scars from past fires. Large stumps 3-4 feet in diameter are common. There are a few large diameter snags in most of the harvest areas usually near wet areas. Many of the harvest areas have concentrations of large down woody debris, again usually near wet places or in riparian areas. Also common in these harvest areas are areas of closed canopies with moss as the dominant understory vegetation. Other native trees such as hemlock, red cedar, grand fir, bigleaf maple, alder, cherry and madrona occur with varying frequency. Disturbed wet areas are dominated by patches of alder. There are occasional hardwood openings of chinquapin and bigleaf maple with higher shrub, lichen and bryophyte diversity. Openings of dense vine maple are also common. Dwarf mistletoe is present in some of the harvest areas, predominantly associated with hemlock.

Plant communities are predominately Douglas-fir/salal with Douglas-fir/Ocean spray-dwarf Oregon grape occurring on south facing slopes. Epiphytic lichen communities reflected the age of the stands in that the species present are mostly common “weedy” species that come into young stands. Bryophyte communities were typical of lower elevation Western Cascades young forests.

The Riparian Reserves have the same stand history as the adjacent Matrix lands, so that the same stand conditions described above exist in both Land Use Allocations.

3.2 T & E Wildlife:

3.2.1 Bald eagle (Threatened):

Suitable nesting habitat for bald eagles is mature forest within one mile of a lake, river or major tributary. There is no suitable nesting habitat for bald eagles within or adjacent to the project area. There is an active bald eagle communal winter roost within a Bald Eagle Habitat Area that is 0.25 mile from Harvest Area No. 9A.

3.2.2 Northern Spotted Owl (Threatened):

Suitable nesting habitat for this species is mature forest (generally greater than 80 years old) with high canopy cover, an open understory, large down logs and large snags. There is no suitable nesting habitat within the proposed project area. There is suitable owl habitat within 0.25 mile of Harvest Area Nos. 9A and 9B.

Dispersal habitat for spotted owls is generally defined as stands ranging from 40 to 79 years of age. There are 303 acres of dispersal habitat in areas proposed for harvest under Alternative 2. There are 103 acres of dispersal habitat proposed for harvest under Alternative 3. There are no spotted owl activity centers, Unmapped Late Successional Reserves (LSR) or designated Critical Habitat within 0.25 mile of the proposed harvest areas.

3.3 Botany:

Special Status Plants

Surveys for vascular plants (special status and survey and manage species) were done during the 1998 field season. *Cimicifuga elata* (Bureau Sensitive) was found in the area and harvest boundaries were adjusted to remove *Cimicifuga* locations from the proposed project area.

3.4 Survey and Manage Species:

3.4.1 Wildlife:

Under the *Record of Decision and Standard and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (ROD) the Eugene District has potential habitat for Survey and Manage wildlife species.

The Oregon megomphix (*Megomphix hemphilli*) is a Category A mollusk in the proposed project area. This mollusk requires management of all sites known as of September 30, 1999 and pre-disturbance surveys in Linn County. All surveys for megomphix were completed to current protocol in proposed harvest areas and all sites would be managed according to current management recommendations. A maximum of thirty-four megomphix sites would be managed within the proposed harvest areas.

The Crater Lake tightcoil (*Pristiloma arcticum crateris*) is a Category B mollusk that requires equivalent effort surveys and management of known sites. Surveys for this species were completed to protocol in proposed harvest areas and no individuals were identified in the proposed project area.

The red tree vole (*Arborimus longicaudus*) is a Category C mammal that requires pre-disturbance surveys and management of high priority sites. Surveys for this species have been completed to current protocol in proposed harvest areas and all sites would be managed according to the current management recommendations. Two hundred and three trees were identified as requiring management for red tree voles as a result of surveys for this proposed project. These trees would be managed within a total of 19 Habitat Areas covering 365 acres.

All surveys and subsequent management of S&M wildlife species for this proposed project would be consistent with the ROD, current protocols and current management recommendations, therefore effects to these species will not be analyzed in this document.

3.4.2 Fungi, Bryophytes, Lichens and Vascular Plants:

The project area is habitat for a number of Survey and Manage fungi, lichens, bryophytes and vascular plants. The fungi, bryophyte and lichen communities are typical for a second growth Douglas-fir dominated forest. See the analysis file for the list of species included as part of the surveys. Surveys were conducted in 1997, 1998 and 2001 consistent with the current survey protocols. Two sites of *Sparassis crispa*, a Category “D” fungi were found incidentally in Harvest Area No. 7a. No other known sites of Survey and Manage species on the current list of species requiring management occur in the project area.

Category “D” guidance directs to “manage high priority sites,” but there are no management recommendations for this species at this time. Typically, maintenance of substrate material the species is dependant upon is key to protection. The *Sparassis crispa* is growing on old, large diameter stumps. This species typically comes up in the same spot year after year and may be saprophytic with the stumps.

3.5 Soils:

Soils in the project area include: Bellpine, Blachly, Cumley, Harrington, Hembre, Honeygrove, Kinney, Klickitat, Minniece, Nekia, Peavine, and Ritner soil series. All series except Minniece are suitable for timber production and management. Areas containing Minniece soils are classified as TPCC (Timber Production Capability Class) FW-NW for excessive ground water and are found near project Harvest Area No. 7. A small area (less than 1 acre) with a moderate to high slope stability risk is located in Harvest Area No. 7. Two locations in Harvest Area No. 7 could be classified as TPCC FS-NW for shallow, cobbly soils. Cumley soils have seasonally high water tables and occur in the project area between Harvest Area Nos. 5A and 5B and in the riparian area of Harvest Area No. 2.

All Harvest Areas have compacted soils as a result of past timber management activities. Old roads and skid trails are found throughout the project area and maintain some degree of residual compaction.

3.6 Water Quality:

Streams within the project area are within the Courtney, Bickmore, Brush and Pugh Creek drainages and are tributaries of the Calapooya River. Locations and brief descriptions of hydrology features are in the Analysis File. The Calapooya River has been listed as water quality limited by the Oregon Department of Environmental Quality for the parameters of temperature and bacteria from the mouth of the river to Brush Creek. Removal of shade due to past harvest of riparian stands on private lands has contributed to increased water temperatures (Calapooya WA, Feb. 1999).

There are no filed water rights within the project area. The closest filed water right is for irrigation use, approximately three-fourths of a mile below Harvest Area 4 in Brush Creek. There are also filed irrigation rights 1½ miles downstream of Harvest Area 7 on Pugh Creek and on Brush Creek about 3 miles downstream from Harvest Area 5. There are many irrigation rights on the Calapooya River. There is a known domestic use (drinking) of water less than a ¼ mile downstream of Harvest Area 4 (stream #1, Analysis File), but this is not a filed water right.

Several roads in the project area are eroded due to lack of regular maintenance and these roads either route sediment and surface runoff directly to nearby streams, or have the potential to do so during storm events. No data has been collected to quantify the extent of sediment production or the amount of water draining into streams from the roads during storm events. At some locations (unnumbered road adjacent to Harvest Area No. 9), log culverts have failed and fill material moved down the stream channels.

3.7 Hydrology:

The harvest areas vary from 800 feet to 2320 feet in elevation. Most of the proposed harvest areas are in the rain dominated zone and are rarely impacted by rain-on-snow events. Only one Area (7B, 47 acres) is located at an elevation somewhat susceptible to rain-on-snow events where most winter precipitation is rain, but transitory snow packs can also occur. The Calapooya Watershed Analysis indicated very low potential in this portion of the watershed for change in all peak flows greater than a 2-year event due to rain-on-snow effects.

Many old abandoned roads and tractor skid trails within the project area were used during the last logging entry. There are many old stream crossings, particularly in and near Harvest Area Nos. 5 and 7, and many hydrologic features have been altered and/or rerouted by past ground disturbance. Log culverts and fill were used at most of the stream crossings and fill depth varies from a few feet to 15 feet in one case. Most of the old crossings have 2 to 4 feet of fill over the culvert. The Calapooya Watershed Analysis indicated it would be unlikely that surface runoff from roads in this part of the watershed is large enough to affect stream processes.

There are other hydrologic features such as springs, seeps, and wetlands that are located adjacent to the proposed harvest areas. These water resources would be protected under the establishment of interim Riparian Reserves, consistent with Northwest Forest Plan Standards and Guidelines.

3.8 Threatened Fish Species Habitat:

Calapooya River:

Spring run chinook salmon (*Oncorhynchus tshawytscha*) and winter run steelhead trout (*Oncorhynchus mykiss*) are federally listed by the (NMFS) National Marine Fisheries Service as threatened species and are known to utilize the Calapooya River which is part of the (ESU) Upper Willamette River Evolutionary Significant Unit. The Calapooya River is designated critical habitat for listed salmon and trout species and is classified as EFH (Essential Fish Habitat) by NMFS for spring run chinook salmon.

Runs of spring chinook salmon in the Calapooya River system are thought to be very small but have historically used the mainstem Calapooya River from the town of Holley as far upstream to its confluence with Treadwell Creek for spawning and rearing. The lower reaches of the major streams, tributary to the Calapooya River (Courtney, Brush, and Pugh Creeks) are not used by spring chinook salmon most likely due to a combination of factors including gradient, shade, abundance of large woody material, and other habitat modifying influences such as agricultural and livestock uses. ODFW (Oregon Department of Fish

and Wildlife) since 1981 has attempted to restore runs of spring chinook salmon but have met with limited success due primarily to blockages by small dams and loss of juveniles at diversion channels. Snorkle surveys performed by ODFW since 1996 have found spring chinook spawning redds or adults as far upstream as Potts Creek.

Winter runs of steelhead trout use the lower Calapooya River as a migration route and its upper mainstem reaches and major tributaries for spawning and rearing. Historically, winter steelhead trout used Courtney, Brush, and Pugh Creeks as spawning and rearing areas. However, no inventories exist to confirm any inferred current use in these systems. It is postulated that low stream flows and elevated water temperatures may limit the use of the lower reaches of Courtney, Brush, and Pugh Creeks. Migration barriers created by insufficiently sized culverts and lack of habitat diversity may also contribute to limited use of otherwise potential steelhead habitat. Reportedly the Calapooya River system represents about 8.6 percent of the total habitat used by spawning winter steelhead in the ESU. ODFW surveys since 1985 have reported adults and redds throughout the upper reaches of the mainstem Calapooya River and lower reaches of its major tributaries.

Courtney Creek:

Harvest Area Nos. 6 and 9 are in the Courtney Creek sub-basin. No fish bearing streams occur in either project area. Distance to nearest confirmed fish presence (cutthroat trout) is approximately 1.5 and 1.1 miles for Areas 6 and 9, respectively. No steelhead were found during BLM spawning surveys performed in Courtney Creek to date. Distance to confirmed chinook habitat is over 10 miles downstream of the project area.

Brush Creek:

Harvest Area Nos. 2, 3, 4, and 5 are in the Brush Creek sub-basin. No fish bearing streams occur in the immediate project areas. Distance to nearest confirmed fish presence (cutthroat trout) and potential steelhead habitat is approximately 0.1 miles for Harvest Area No. 4. Approximately 4 acres of Harvest Area No. 4 is in the Bickmore Creek sub-basin which contains a confirmed population of cutthroat trout. A migration barrier culvert approximately 1.5 miles downstream of Area 4 on Bickmore Creek precludes steelhead movement. Harvest Area Nos. 2, 3, and 5 occur above potential steelhead habitat due to a barrier culvert which is approximately 3 miles downstream. No steelhead were found during BLM spawning surveys performed in Brush Creek to date. Distance to confirmed chinook habitat is approximately 5 miles downstream.

Pugh Creek:

Harvest Area No. 7 is in the Pugh Creek sub-basin. No fish bearing streams occur in the immediate project area. Distance to nearest confirmed fish presence (cutthroat trout) is approximately 0.1 miles downstream. Distance to nearest potential steelhead habitat is about 1 mile downstream of the project area and is limited by a barrier culvert on Pugh Creek. However, to date no steelhead were found by BLM during spawning surveys in Pugh Creek. Distance to confirmed chinook habitat is approximately 3 miles downstream.

4.0 ENVIRONMENTAL CONSEQUENCES

This Chapter incorporates the analysis of cumulative effects in the *USDA, Forest Service and the USDI, Bureau of Land Management Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl*, February 1994, (Chapters 3 & 4), *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, January 2001, (Chapters 3 & 4) and the *Eugene District Record of Decision and Resource Management Plan*, June 1995 (Eugene District ROD/RMP). These documents analyze most cumulative effects of timber harvest and other related management activities. None of the alternatives in this proposal would have cumulative effects on resources beyond those effects analyzed in the above documents. The following analysis includes cumulative effects that supplement those analyzed in the above documents, and provides site-specific information and analysis particular to the alternatives considered here. Aquatic Conservation Strategy Objectives are listed in Appendix A.

4.1 Alternative I - No Action

4.1.1 What would be the effect of timber harvesting and road management activities on water quality and T&E fish habitat? (Issue #1)

Indicators: 1) Number of Stream Crossings Constructed or Removed.
2) Road Tilling Designed to Intercept Road Related Runoff Before it reaches the Stream System.

Direct and Indirect Effects:

Under this alternative, many of the Aquatic Conservation Strategy Objectives (#3, #4, #5, and #6) may not be met because taking no action would not necessarily maintain the physical integrity of the aquatic system, water quality, or the sediment regime in these drainages. Road and stream crossings which currently contribute sediment to stream systems would continue to at least potentially impact threatened fish species habitat by affecting stream stability above, but in the influence areas of known fish habitat. Sediment reaching streams from road sources would not be alleviated and continued degradation of road and culvert condition could contribute to catastrophic failures which would at the very least indirectly affect threatened fish habitat. An indirect effect of implementing this alternative is that road-related sedimentation and run-off to streams may escalate due to the lack of road maintenance. Twelve existing stream crossings would not be removed or maintained and could potentially result in mass movement and short-term water quality degradation. Although the water table elevation in wetlands and floodplains would remain in the existing condition, mass wasting at unstable stream crossings may impact downstream floodplains and ACS Objective #7 may not be attained.

Cumulative Effects:

Opportunities to restore 12 stream crossings where there are currently undersized or non-functional culverts and the closure of Roads 14-1-31, 14-1-31.1 (Area 4), a segment of Old Brush Creek Road (Area 5), 14-2-34 (Area 6), an unnumbered road (Area 7), and 14-2-28, 14-2-28.1 and unnumbered roads adjacent to Harvest Area No. 9 would be postponed to a

later date. Detrimental effects from possible culvert failures and road introductions of sediment could occur due to lack of maintenance, and it is unknown what the cumulative ramifications may be.

Continuation of present effects and any future escalation of effects could have downstream impacts to listed species habitat. Incremental increases to overall sedimentation rates could result in a further degradation of habitat or conditions needed to support potential chinook salmon and steelhead trout use in the major tributaries to the lower Calapooya River. Aquatic habitat upstream of known listed fish species habitat would not be incrementally improved by minimizing sediment input to streams or by creating a more free-flowing aquatic system. Thus, no overall improvement of listed species habitat or its contributing upstream areas would occur.

Alternative I would have no effect on spring run chinook salmon Essential Fish Habitat.

Indicator: Amount of Compacted Soil Surface and Acres of Road with Infiltration Characteristics.

Direct and Indirect Effects:

No additional soil compaction would occur. Existing roads would not be closed and tilled.

Cumulative Effects:

The cumulative effect is that soil compaction would not be ameliorated and therefore recovery of compacted soils would occur very slowly over time.

4.1.2 What would be the effect of commercial thinning on stand structure and harvest volume? (Issue #2)

Indicators: 1) Acres Treated
2) Timber Volume

Direct and Indirect Effects:

This alternative would not improve forest ecosystem functioning. The 277 overstocked acres identified for treatment would stagnate, grow thin tall trees susceptible to wind, fire and disease. Stress conditions often reduce a forest's ability to ward off insect and disease agents. In the long term (25-50 years) the risk of insects or disease agents appearing are high. Forest health issues and catastrophic events become more likely. Stagnate stands would greatly diminish future volume potential from Matrix lands and opportunities to improve stand structure would not occur on both Connectivity and Riparian Reserves. Not actively managing available lands at the appropriate times would be considered an opportunity forgone.

Cumulative Effects:

The cumulative effects of not treating overstocked stands identified has little to no effect on the watershed as a whole because the scope of this project comprises approximately 1 percent of the entire watershed and approximately 4 percent of the BLM managed lands.

4.2 Alternative II - Proposed Action

4.2.1 What would be the effect of timber harvesting and road management activities on water quality and T&E fish habitat? (Issue #1)

Indicators: 1) Number of Stream Crossings Constructed or Removed.

2) Road Tilling Designed to Intercept Road Related Runoff Before it reaches the Stream System.

Direct and Indirect Effects:

Direct effects include the temporary addition of sediment to 11 streams during the removal of fill material on roads associated with Harvest Area Nos. 5, 7, and 9. (One stream adjacent to Area 9 has two stream crossings that would be removed under this action, which is why there are 12 culverts on 11 streams.) The impacts to water quality at these locations are expected to be short-term, as the first fall rains following the activity would move the sediment downstream. In the long-term, stream-side conditions would be improved and the potential for road-related sedimentation would be reduced since the unmaintained roads would be closed and left in an erosion resistant condition (this action meets ACS Objectives 4, 5). By conducting the work during low flow periods when in-stream work is allowed (see Appendix B, Project Design Features, Culvert Work Timing), the amount of sediment delivered to streams would be minimized. Minor excavation to restore the natural stream channel configurations at these sites and tilling the road where subgrade conditions allow would minimize future sediment recruitment from the road prism (this action meets ACS Objectives 3, 5). Restoration of the stream banks and channel bottoms at the 12 locations would eliminate existing artificial barriers to sediment transport as well as reduce the risk of future road/culvert failures in this area. Tilling or storm-proofing roads near these streams would also reduce road-related runoff to contribute to the restoration of natural stream flow (meets ACS Objective 6). Tilling or storm proofing the segment of Road No. 14-2-28 near small wetlands is not expected to prevent attainment of ACS Objective 7 because the road does not currently route surface water to those features. No changes to stream water temperatures are expected from harvesting or road work.

Indirect effects include impacts to the channel farther downstream as a result of movement of small amounts of sediment generated during fill removal at the 12 stream crossings. Again, this impact is expected to be short-term as the fall and winter storms would disperse the sediment through the system downstream. Sediment and bedload materials stored in the channel above the undersized culverts may mobilize after the stream crossings are removed. No impacts to water quality are anticipated from timber harvest activities because no stream-side vegetation would be disturbed.

No negative direct or indirect effects to listed fish habitat are anticipated. Temporary road building activities and placement of one temporary culvert for the purpose of timber management could cause a short duration increase of sediment to non-fish bearing streams in the project areas. Limitation of activities to low stream flow periods would reduce the risk of downstream effects during installation and removal of temporary stream crossings

prior to late winter or early spring freshet would allow any material remaining to be mobilized and removed through high flow transport. Distance to known steelhead trout and chinook salmon habitat is equal to the distance from each project area to the mainstem Calapooya River which ranges from 3 to over 10 miles away. If a more conservative estimate is used for distance to steelhead trout potential habitat the range is narrowed to between 0.1 and 1 mile away. The harvest areas with stream crossings are 1.5 to 3.5 miles away from potential steelhead trout habitat.

New temporary road construction would involve placement of a stream crossing in a channel just west of Harvest Area No. 7A. River gravel would be used to construct the fill at this temporary culvert installation. When the road is closed and the culvert is removed, some gravel could be left in the channel with minimal impact to water quality. None of the other proposed spur roads for the harvest areas are located within the Riparian Reserves. No sedimentation would be expected from timber harvest because adequate buffers would be established where streamside vegetation would remain intact, and any potentially unstable slopes would be withdrawn from proposed harvest activities.

Reductions in overall road mileage and number of stream crossings would reduce existing chronic, sedimentation impacts upstream of listed species habitat. Direct or indirect sediment contributions to streams would be decreased and therefore, the potential of sediment input to listed species habitat would also be reduced. Removal of culverts would return the stream systems to a more natural dynamic state and allow processes associated with a free-flowing system to influence downstream fish habitat.

Cumulative Effects:

The Proposed Action includes closing several temporary roads following harvest activities, and stream channel restoration along roads no longer needed. Implementation of this proposal, combined with other ongoing and planned road renovation and restoration work in the Calapooya Watershed (both on BLM and private lands) would result in a reduction of road related sediment delivery to streams in the future and water quality would be improved.

Removal of culverts and road closures would result in an overall decrease in sediment reaching streams via road networks. The result is an expected reduction in sediment reaching Courtney, Brush, and Pugh Creeks with a resultant reduction of sediment reaching the Calapooya River. Removal of sediment mobilized from road sources upstream of listed fish habitat would promote the overall enhancement of habitat quality and diversity necessary to re-establish populations of threatened species in the lower Calapooya River tributaries. Therefore, small but positive benefits to listed species habitat are expected.

Essential Fish Habitat:

Alternative II would be NLAA (not likely to adversely affect) spring run chinook salmon EFH. Distances to known and potential habitat combined with the project scope, extent, and design features would make detectable adverse effects very unlikely.

Indicator: Amount of Compacted Soil Surface and Acres of Road with Infiltration Characteristics.

Direct and Indirect Effects:

Timber management activities could lead to additional soil compaction. Compaction would occur along cable yarding skid trails, ground-based skid trails, machine piling areas, and temporary roads and landings. Predominant use of cable yarding is expected to result in an addition of less than 10 percent of the ground left in a compacted state.

Compaction from temporary road and landing construction would impact approximately 9 acres over the project area. Approximately 95 percent of the compaction would be eliminated with the proper application of design features and tilling all temporary roads and landings.

Cumulative Effects:

Cumulative effects from implementation of Alternative II may have a slight increase in soil compaction (within RMP standards and guidelines) due to harvest activities but combined with road closures and tilling of temporary roads and landings the result would be an overall decrease in soil compaction. The 9 acres of compaction from the construction of temporary roads would be tilled with approximately 0.5 acres residual. The compaction on existing roads (approximately 21 acres) would be mitigated by road closure, including tilling. Recovery of existing compacted soils would be enhanced by approximately 21 acres.

4.2.2 What would be the effect of commercial thinning on stand structure and harvest volume? (Issue #2)

Indicator: 1) Acres Treated
2) Timber Volume

Direct and Indirect Effects:

This alternative would restore and enhance 277 acres of Matrix forest and 26 acres of Riparian Reserve. Treatment of overstocked stands would improve the health and integrity of the forested ecosystem. Reducing stand density, removing suppressed competing trees and allowing more sunlight through the canopy to the forest floor enhances the functioning of the forested ecosystem. Approximately 3,115 MBF would be produced from this enhancement now and improved growth conditions would provide increased volume in the future when final harvest occurs.

Cumulative Effects:

The 277 acres targeted for treatment represent 4% of BLM lands and 0.8% of the total acres in the Calapooya watershed. Cumulative effects of a silvicultural treatment on the aforementioned acres is negligible beyond the site specific scale.

4.3 Alternative III - No Road Construction

4.3.1 What would be the effect of timber harvesting and road management activities on water quality and T&E fish habitat? (Issue #1)

Indicators: 1) Number of Stream Crossings Constructed or Removed.
2) Road Tilling Designed to Intercept Road Related Runoff Before it reaches the Stream System.

Direct and Indirect Effects:

Direct and indirect effects to water quality from short-term sediment delivery to channels as a result of stream crossing culvert removal during road closure work would occur at 6 sites, as compared to the 12 sites under the Proposed Action. These effects would be the same as those described under the Proposed Action. Restoration of these stream channel sites would improve the physical conditions of the channel banks and bottoms and the intent of ACS Objective 3 would be met. No impacts to the water quality parameters of temperature and sedimentation are anticipated from timber harvesting because no stream-side vegetation would be disturbed.

Under this alternative, a portion of Road No.14-2-28 near Harvest Area No. 9 would be improved and maintained for future timber management activities on acres deferred from harvesting. The road improvements could include grading, surfacing, and installation of new cross drains and/or lead off ditches, resulting in better drainage of the road prism. An indirect effect of this work would be a reduction of road related runoff and sedimentation that could potentially reach the nearby stream system which would assist in meeting ACS Objectives 4, 5, and 6.

Effects from thinning as related to fish habitat are identical to that given in Alternative II. Activities would be limited to Courtney and Brush Creeks with no stream crossings. Stream buffers and no cut zones would essentially preclude negative impacts to water resources.

No effects to listed fish species habitat are anticipated. No road construction would necessitate harvest activities only to the extent possible from existing roads. Road closure and culvert removal operations would be limited to Harvest Area No. 9 and then only to roads not necessary for future actions. Effects from road closure and culvert removal are identical to Alternative II at the localized stream level but with much less of a benefit at the sub-basin level. Distance to known steelhead trout and chinook salmon habitat ranges from 4.5 to 10 miles downslope from harvest areas. Distance to potential steelhead trout habitat ranges from 1.5 to 3.5 miles away from the harvest areas.

Cumulative Effects:

Closing several temporary roads following harvest activities, and stream channel restoration along roads no longer needed would occur under this Alternative. Other roads that have been identified as potential sediment and runoff sources to streams under the

Proposed Action would be addressed at a later date and existing erosion at those locations would continue until that time.

Implementation of this proposal, combined with other ongoing and planned road renovation and restoration work in the Calapooya Watershed (both on BLM and private lands) would result in a reduction of road related sediment delivery to streams in the future and water quality would be improved but to a lesser extent as compared to Alternative II.

Sediment emanating from road sources would be reduced in Courtney Creek. The potential beneficial effects to listed fish species habitat condition are expected to be quite small. The overall effect to fish habitat quality and diversity in the Calapooya River sub-basin would be undetectable; however, upstream improvements would lead to an overall incremental benefit.

Essential Fish Habitat:

Alternative III would be NLAA spring run chinook salmon EFH. No stream crossings occur in the harvest areas and no new roads would be built. Distances to known and potential habitat combined with the project scope, extent, and design features would make detectable adverse effects very unlikely.

Indicator: Amount of Compacted Soil Surface and Acres of Road with Infiltration Characteristics.

Direct and Indirect Effects:

Effects from timber management activities on harvest area soils would be identical to Alternative II. No increase to soil compaction due to new road construction would occur. Portions of existing roads in Harvest Area No. 9 would be tilled and closed resulting in approximately 10.5 acres with an increased rate of soil recovery.

Cumulative Effects:

Cumulative effects would be a very slight increase in soil compaction due to harvest activities but with an overall decrease in compaction due to road closure and tillage of approximately 10.5 acres.

4.3.2 What would be the effect of commercial thinning on stand structure and harvest volume? (Issue #2)

Indicators: 1) Acres Treated
2) Timber Volume

Direct and Indirect Effects:

This alternative would restore and enhance 91 acres of Matrix. The volume produced would be 1,100 MBF. Approximately 12 acres of Riparian Reserve would be treated. The deferred acres would exhibit slower growth rates than the treated portions, consequently at final harvest the volume harvested would be greatly diminished. Not actively managing available lands at the appropriate times would be considered an opportunity forgone.

Cumulative Effects:

The 91 acres targeted for treatment represent 1% of BLM lands and 0.3% of the total acres in the Calapooya watershed. Cumulative effects of a silvicultural treatment on the available acres is negligible.

4.4 ACS Objectives Unaffected by and Common to all Alternatives

The following ACS objectives would be unaffected by the proposed alternatives.

ACS objective 1: The proposed project and all alternatives would not prevent the attainment of stated goals in ACS objective 1. All alternatives would have no effect upon the distribution, diversity, or complexity of watershed and landscape-scale features. As such, aquatic systems to which species, populations, or communities are uniquely adapted would be maintained. The limited upland and riparian reserve prescriptions, establishment of a 100 foot “no harvest” zone within riparian reserves, and limited road building activities are expected to result in no measurable change in aquatic systems.

ACS objectives 2, 8 and 9: All three alternatives analyzed in this EA maintain components of riparian habitat and connectivity as addressed in Aquatic Conservation Strategy objectives 2, 8 and 9. No timber harvest would occur within 100 ft of streams for any alternative, so riparian habitat components would not be directly affected by any harvest activities. Timber harvest in the upland portion of the Riparian Reserves (100-200 feet from streams) could result in changes to the microclimate conditions at the edges of riparian reserves, however, this would result in no substantive changes to riparian vegetation or other components of riparian habitat. Riparian habitat components, vegetative structure, and spatial and temporal connectivity within and between watersheds would be maintained by all alternatives.

5.0 OTHER ENVIRONMENTAL EFFECTS COMMON TO ALL ACTION ALTERNATIVES

5.1 Unaffected Resources

The following either are not present or would not be affected by any of the alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, flood plains, Wilderness, hazardous materials, and wild and scenic rivers.

5.2 Wetlands

The timing, variability and duration of flood plain inundation and water table elevation in wetlands would be maintained and the action alternatives would not prevent the attainment of ACS Objective 7. Wetlands would be protected from ground disturbing activities and interim Riparian Reserves would be established around all these features. There are no meadows in the project area. Proposed upland treatments are likely to have little or no impact on water table elevation or flood plain inundation in the localized areas, and no effect at a watershed scale.

5.3 Threatened and Endangered Species

Consultation for wildlife was accomplished in “Programmatic Biological Assessment of Fiscal Year 2002 Projects in the Willamette Province that Would Modify the Habitats of Bald Eagles or Northern Spotted Owls, or Modify the Critical Habitat of the Northern Spotted Owl.” The project is considered a “not likely to adversely affect” action on listed species.

Consultation with National Marine Fisheries Service for listed fish was conducted in January 2002. This action was determined to be a “may affect not likely to adversely affect listed species.”

5.3.1 Bald eagle

There would be no effects to bald eagles as a result of either action alternative. There is a bald eagle communal winter roost within a Bald Eagle Habitat Area that is 0.25 miles from Harvest Area No. 9A. Potential disturbance effects from harvest activities within Area 9A under Alternative 2 and from hauling through the communal roost site are eliminated by seasonal restrictions detailed in Project Design Features. No bald eagle nesting or wintering habitat would be modified by either action alternative.

5.3.2 Northern spotted owl

No suitable nesting habitat would be modified by either action alternative as there is no suitable habitat within the proposed project area. There is suitable habitat within 0.25 miles of Harvest Area Nos. 9A and 9B that has not been surveyed for spotted owl occupancy. Seasonal restrictions during the critical nest period (March 1 to July 15) within 0.25 mile of suitable habitat would reduce the potential effect due to disturbance in this suitable habitat. Disturbance from proposed activities that occur outside of critical nest period would not be expected to adversely affect any spotted owls that may be utilizing this suitable habitat.

Proposed harvest activities would degrade 303 acres of spotted owl dispersal habitat under Alternative II and 103 acres of dispersal habitat under Alternative III. Because the action alternatives would degrade dispersal habitat in an area where habitat is not limited, these alternatives would not be expected to adversely affect spotted owls.

5.4 Cultural Resources

No cultural sites have been identified. The analysis file contains the cultural report.

5.5 American Indian Rights

No impacts on American Indian social, economic or subsistence rights are anticipated. No impacts are anticipated on the American Indian Religious Freedom Act. Maps of the proposed harvest areas were sent to the Confederated Tribes of Grand Ronde and Confederated Tribes of Siletz, and no comments were received.

5.6 Environmental Justice

The proposed project areas are not known to be used by, or disproportionately used by, minorities or low-income populations at a greater rate than the general population. This

includes the relative geographic location and cultural, religious, employment, subsistence, or recreational activities that may bring minorities or low-income populations to these areas. BLM concludes that no disproportionately high, adverse human health or environmental effects would occur to minorities, or low-income populations from these actions.

5.7 Invasive and Non-Native Species

Scot's broom, St. John's wort and Tansy ragwort occur along the roads in this project area. Few of the bio-control beetles for St. John's wort were seen. Some of the Tansy ragwort had cinnabar moths eating it. Very few weeds were seen within the harvest areas, likely due to closed canopy conditions of the forest. By planting native seed, using weed free straw bales and washing equipment prior to moving to the project area would minimize the spread of weeds within the project area. See Project Design features for Temporary Road Construction and Road Closure.

6.0 LIST OF AGENCIES AND PERSONS CONSULTED

This EA is being mailed out to the following members of the public and organizations:

John Bianco
Oregon DEQ
Jim Goodpasture
Pam Hewitt
Charles & Reida Kimmel
Lane County Land Management
Carol Logan, Kalapooya Sacred Circle Alliance
Oregon Dept of Fish & Wildlife
Oregon Dept of Forestry
Oregon Natural Resources Council
The Pacific Rivers Council
John Poynter
Leroy Pruitt
Roseburg Forest Products Co.

Peter Saraceno
Sierra Club - Many Rivers Group
Swanson Superior Forest Products Inc.
Craig Tupper
Jan Wroncy
Ann Mathews
American Lands Alliance
Kris and John Ward
Sondra Zemansky
Robert P Davison
Tom Stave, U of O Library
John Muir Project
James Johnston

7.0 LIST OF PREPARERS

THE INTERDISCIPLINARY TEAM

NAME	TITLE	RESOURCE/DISCIPLINE
Cheshire Mayrsohn	Botanist	Botany
Paula Larson	Wildlife Biologist	Wildlife Habitat
Kris Ward	Hydrologist	Water Resources
Darrell Ashcraft	Fuels Technician	Fuels
Dave Reed	Fuels Mgt. Specialist	Fuels
Mike Southard	Archaeologist	Archaeology
Beth Clarke	NRS Technician	Cultural Surveys
Jill Williams	Forester	Silviculture/Harvest Systems/Mapping
Mark D'Aversa	Soil Scientist	Soils/Fisheries
David Mattson	Engineer	Engineering
Glen Gard	Haz/Mat Coordinator	Hazardous Materials
Jack Zwiesler	Forester	Team Lead/EA Preparation

Finding of No Significant Impact

CALAPOOYA TIMBER SALE

EA OR 090-02-03

The Interdisciplinary Team for the McKenzie Resource Area, Eugene District, Bureau of Land Management has completed an Environmental Assessment (EA) and analyzed a proposal to harvest Federal forest in the Calapooya Timber Sale areas. The Calapooya Sale Areas are located approximately 7 miles south of Sweet Home, Oregon in T. 14 S., R. 1 W., Sections 31 and 33; T. 14 S., R. 2 W., Sections 28, 33 and 34 and T. 15 S., R. 1 W., Sections 1, 5 and 9 of the Willamette Meridian. The proposal is a commercial thinning involving the removal of timber from the Matrix and Riparian Reserves.

The proposed harvest would provide jobs and supply wood products. Cable logging systems and tractor logging systems would be used from existing roads, roads to be constructed and an approved skid trail network. Alternative II would construct approximately 1.7 miles of temporary road and approximately 5.5 miles would be closed upon completion of harvest activities. In Alternative III no new temporary roads would be constructed and approximately 1.9 miles would be closed. No permanent road would be constructed.

The design features of the Proposed Action are described in the attached Calapooya Analysis Area Environmental Assessment (OR 090-EA-02-03). Anticipated impacts to the environment are expected to be insignificant. The Proposal to harvest timber from Matrix and Riparian lands in the Eugene District are in conformance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl* (April 1994), the *Record of Decision for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, February 2001, and the *Eugene District Record of Decision and Resource Management Plan* (June 1995).

The anticipated environmental effects contained in this EA are based on research, professional judgement, and experience of the Interdisciplinary (ID) team and Eugene District Resources staff. No significant adverse impacts are expected to (1) Threatened or Endangered species, (2) Flood plains or Wetlands/Riparian areas, (3) Wilderness Values, (4) Areas of Critical Environmental Concern, (5) Cultural Resources, (6) Prime or unique Farmland, (7) Wild and Scenic Rivers, (8) Air Quality, (9) Native American Religious Concerns, (10) Hazardous or Solid Waste, (11) Water Quality, or (12) Minority Populations or Low-Income Populations.

DETERMINATION

On the basis of information contained in the EA, and all other information available to me, it is my determination that the Alternatives analyzed do not constitute a major Federal action affecting the quality of the human environment. Therefore, a new EIS or supplement to the existing EIS is unnecessary and will not be prepared for this proposed timber sale.

Approved by: _____
Field Manager, McKenzie Resource Area

Date: _____

Appendix A

AQUATIC CONSERVATION OBJECTIVES

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include flood plains, wetlands, upslope areas, headwater tributaries, and intact refugia. These lineages must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain in the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
5. Maintain and restore the sediment regime under which an aquatic ecosystem evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
6. Maintain and restore in stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing (i.e., movement of woody debris through the aquatic system). The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
7. Maintain and restore the timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands.
8. Maintain and restore the species composition and structural diversity of plant communities in riparian zones and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration, and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.
9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Appendix B

PROJECT DESIGN FEATURES FOR ALL ACTION ALTERNATIVES

The following project design features would be implemented with the proposed action. Design features are procedures normally used to avoid or reduce environmental impacts, or are required standards and guidelines included in a timber sale contract.

- **Riparian Reserves** - Riparian Reserves would be left on all streams, wetlands, springs, and ponds according to the Northwest Forest Plan and RMP Standards and Guidelines. The reserves would provide habitat for Special Status and other species. In Alternative III timber harvest activities would be conducted in the upland portion of selected sections of the Riparian Reserves. Each Watershed Analysis Unit has an associated site potential tree height based on inventory plots from within the watershed. The site potential tree height for the Calapooya Watershed Unit is 200 feet. A one site tree height or 200 feet is considered Riparian Reserve for all non-fish bearing streams and two site tree heights or 400 feet is considered riparian for all fish bearing streams adjacent to the harvest areas.
- **Coarse Woody Debris Requirement** - Retain all Class 3, 4 and 5 coarse woody debris (CWD) present within the Harvest Areas and all Class 1 and 2 CWD greater than or equal to 20 inches DBH. Minimize damage to coarse woody debris where possible. CWD that presents a hazard to logging operations may be relocated within the project area. Retain large trees, downed wood and large stumps to provide inoculum and habitat for fungi, bryophytes and lichens.
- **Hardwoods and Minor Species** - Retain all Pacific Yew trees in the harvest areas. Hardwood trees, predominantly big leaf maple, red alder and chinquapin, where they occur singularly would not be retained in favor of conifer trees. Where hardwood trees dominate a site, hardwood trees would be spaced according to the silvicultural prescription.
- **Snag Trees** - Existing snags in the harvest areas were found to be below the minimum RMP/ROD standards to meet the 40 percent primary cavity nesting birds criteria. Retain all existing snags that do not pose a safety hazard or an operational obstacle. Snags felled as danger trees would be retained on site as down logs.
- **Special Status Species** - Management activities would be altered according to RMP standards and guidelines if any cultural resources, Special Status Plants including Threatened and Endangered, Survey and Manage species, and Threatened and Endangered wildlife are found in or adjacent to the harvest areas.

In Harvest Area 7A, a 60 foot no-entry buffer would be put around the 2 sites of *Sparassis crispa*. The temporary road to the harvest area would be closed after use to prevent disturbance from mushroom pickers to the *Sparassis* sites. Harvest Area No. 7a would be closed to commercial mushroom harvest to prevent collection.

- **Timber Harvesting/Logging** - Require one-end suspension for cable yarded areas. Intermediate supports would be required if necessary to achieve lead-end suspension. Front-end suspension is especially important when yarding over (1) rocky, erodible soils (Klickitat, Harrington, and Ritner series) and, (2) soils with a seasonally high water table (Cumley series).

For ground based (tractor, feller/buncher and forwarder, etc.) yarded areas: restrict operations to slopes less than 35%, predesignate skid trails to less than 10% of ground based yarded area, avoid whole tree yarding, restrict operations to periods of low soil moisture (25% or less), use existing tractor skid trails where feasible, water bar tractor skid trails between logging seasons where erosion is likely, and subsoil with an excavator all new compacted tractor skid trails and the existing tractor skid trails that are used for access. Ground-based yarding would be avoided on Cumley soils (portions of Harvest Area Nos. 5 and 8) and soils with high cobble content (portions of Harvest Area Nos. 4, 5, 6, 7, 8, and 9).

Minimize the size of landings. Landings would be sub-soiled with an excavator upon completion of the project.

Felling and Yarding Requirements: Directional felling and yarding would be used for the protection of retention trees, snags, and reserve areas.

No corridors across stream channels have been proposed. If corridors become necessary then full suspension across stream channels and banks would be required. Corridor width and number of corridors would be minimized. Corridors would be perpendicular to the channels. In the event of layout changes, and it is necessary to yard across TPCC designated fragile soils, full suspension of logs would be required.

Log lengths would be limited to 40 feet to protect residual trees during yarding.

Obtain approval from the Authorized Officer of the location of all primary/designated travelways (skid trails).

Limit the width of each primary travelway (skid trail) to 14 feet.

Keep ground based cutting machines (feller bunchers and harvester processors) moving on top of the slash whenever possible. This is especially critical when soils are heavy in clay and/or when working soon after a rainy period.

- **Slash Disposal/Hazard Reduction** - Tracked equipment (i.e. hydraulic excavator) would be restricted to travel only on all-weather gravel roadways and designated spurs so piling can occur during wet winter months. Slash cleanup and disposal would be restricted to within 25 feet of the roadway edge (approximate minimum boom length) to insure no tracked entry into the unit. Slash to be piled would include all dead and down woody material excluding large coarse woody debris (>20 inches in diameter), root wads, and live vegetation. Large coarse woody debris and root wads would be lifted and placed in the harvest area at maximum boom length to eliminate roadside high-intensity heat sources.

Ideally, roadside piles would not be utilized for wildlife habitat as unburned piles would compromise the objective of securing safer access and egress for the public and firefighting resources should a fire occur in the project area. Separating and decking firewood for public use would be acceptable if suitable firewood exist. Roadside excavator piles and all other landing piles in the harvest area would be covered during the summer months and burned in late fall after fire season has ended. Piles would be burned when soil and duff moistures are high.

- **Temporary Road Construction** - All equipment would be washed prior to arrival at the worksite to prevent import and spread of noxious weeds.
- **Road Improvement** - Permanent roads would be surfaced with rock aggregate to reduce the potential for sediment delivery. Place cross drain relief culverts immediately upgrade of stream crossings where necessary to prevent cut slope ditch sediment from entering streams. Replace existing stream crossing culverts that are (1) filling and otherwise depositing excess sediment into streams, or (2) are undersized and located in an area with moderate to high potential for slope failures. Use the theoretical 100 year storm event as design criteria for permanent stream crossing culverts. In-channel work is to be conducted during low flow periods (See below, **Culvert Work Timing**) prior to fall rains. Design adequate stream protection (i.e. rip rap) where scouring could occur. Silt fences or straw bales should be used to minimize sediment transport from the excavation area to downstream locations.
- **Road Closure**
Remove all stream crossings and cross drain relief culverts. Recycle corrugated metal pipes. In-channel work is to be conducted during low flow periods (See below, **Culvert Work Timing**) prior to fall rains. At stream crossings, recontour the channel side slopes and seed or plant exposed soils with native plant species in conjunction with erosion control blankets or mulch. Weed-free straw bales would be placed downstream of culvert work locations to avoid excess sedimentation. Rock and large wood may be placed in the stream channel to simulate natural conditions.

Where subgrade conditions warrant and the management objective is to permanently close the road, till the compacted road surface. Prior to tillage, remove gravel if possible and stockpile it in a location where it can be used again by the road maintenance crew. If gravel cannot be recycled, pull it into the ditchline to eliminate ditch function. Side cast soils with a high potential for triggering landslides should be removed from fill slopes and used to recontour the cutslope part of the road prism. Place slash and logging debris on the road surface along as much of the length of the road as possible. An excavator can pull small diameter trees and brush from the adjacent forest and coarse woody debris can be placed to block the road bed.

Establish drain dips at the cross drain removal locations on closed roads that are not to be tilled. Construct drainage dips, water bars, or lead-off ditches elsewhere on an untilled road to direct surface water to the forest floor and otherwise leave the road in an erosion resistant condition. Construct earthen barricades with brush or slash additions to adequately limit off highway vehicle traffic.

- **Soils Protection**

Adjust timber harvesting boundaries to exclude all Fragile-Nonsuitable and withdrawn areas from the harvest area. Fragile-Nonsuitable areas include sites with shallow, rocky soils, potentially unstable slopes, and wetlands. Reforestation withdrawn areas include sites with excess surface rock.

Avoid ground based yarding on fragile soils in Harvest Area No. 7.

Block all natural surfaced roads to vehicle access following both temporary and permanent shut down of harvest activities.

- **Seasonal Restrictions** - There would be no harvest or road activities within Harvest Area Nos. 9A and 9B between March 1- July 15 because these Areas are within 0.25 mile of suitable spotted owl nesting habitat. This restriction may be waived by the Area Wildlife Biologist if it is determined that nesting spotted owls would not be disturbed by proposed activities.

There would be no harvest or road activities in Harvest Area No. 9A and no hauling on BLM road 14-2-16 between November 15 and March 15 because of the proximity of the bald eagle winter roost area.

In all Partial Harvest Areas yarding would be restricted during sap flow typically between April 1st and June 15th.

Culvert Work Timing

Work to be done during Oregon guidelines for timing of in-water work to protect fish and wildlife resources.

Harvest Area No. 7 work only from July 15 to August 31.

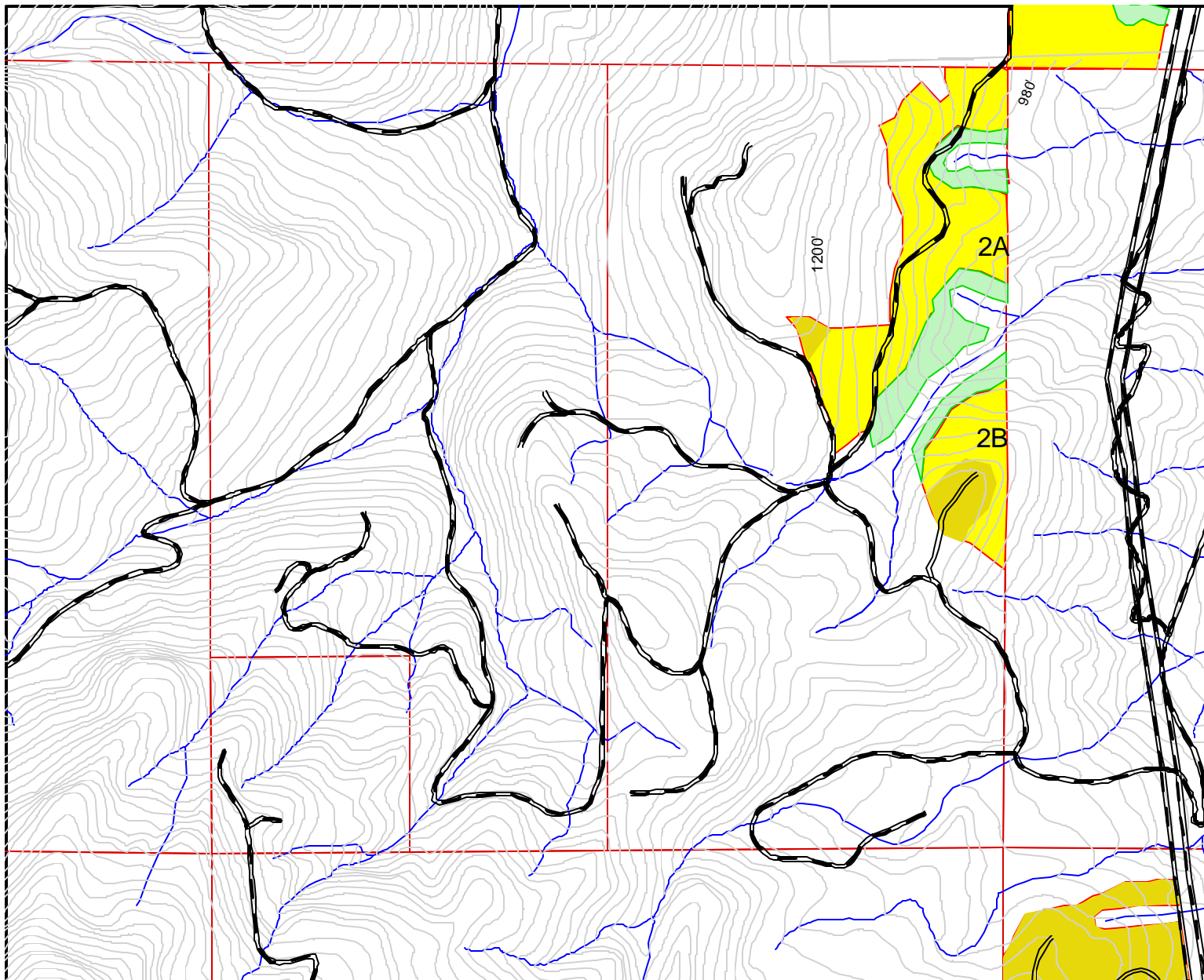
Harvest Area Nos. 4, 5 and 9 work only from June 1 to September 30.

Appendix C

GLOSSARY

Road Closure: The road segment would be closed to vehicles on a long-term basis, but may be used again in the future. Prior to closure, the road would be left in an "erosion-resistant" condition by removing culverts, establishing waterbars or drain dips as needed, eliminating diversion potential at stream channels, recontouring channel sides and bottom at stream crossing restoration locations, and removing fills on unstable areas. Exposed soils would be treated to reduce sedimentation. The road would be closed with a device similar to an earthen barrier or equivalent and adjacent brush and/or small conifer trees would be incorporated into the barricade to further discourage vehicle entry.

Permanent Road Closure: No future need for the road is identified and the road may be tilled, seeded, mulched, and planted to reestablish vegetation. Culverts and fills in stream channels, as well as any unstable fill would be removed to restore natural hydrologic flow. The road would not require future maintenance and would be closed with an earthen barrier or equivalent and adjacent brush and/or conifer trees would be incorporated into the barricade to further discourage vehicle entry. This category also includes roads that have been closed due to a natural vegetation process.



Project Proposal:
 Harvest Area - 2A - 30 acres, Riparian - 9 ac.
 Harvest Area - 2B - 11 acres, Riparian - 2 ac.
 Total acres 41
 Riparian Reserve Treatment 11 acres

Approx. 5 acres ground based

Elevation range:
 980' - 1200'

Proposed Action

2002 Project Area Map

Calapooya , area #2

T.15S., R.01W. Sec 05

1000 0 1000 Feet

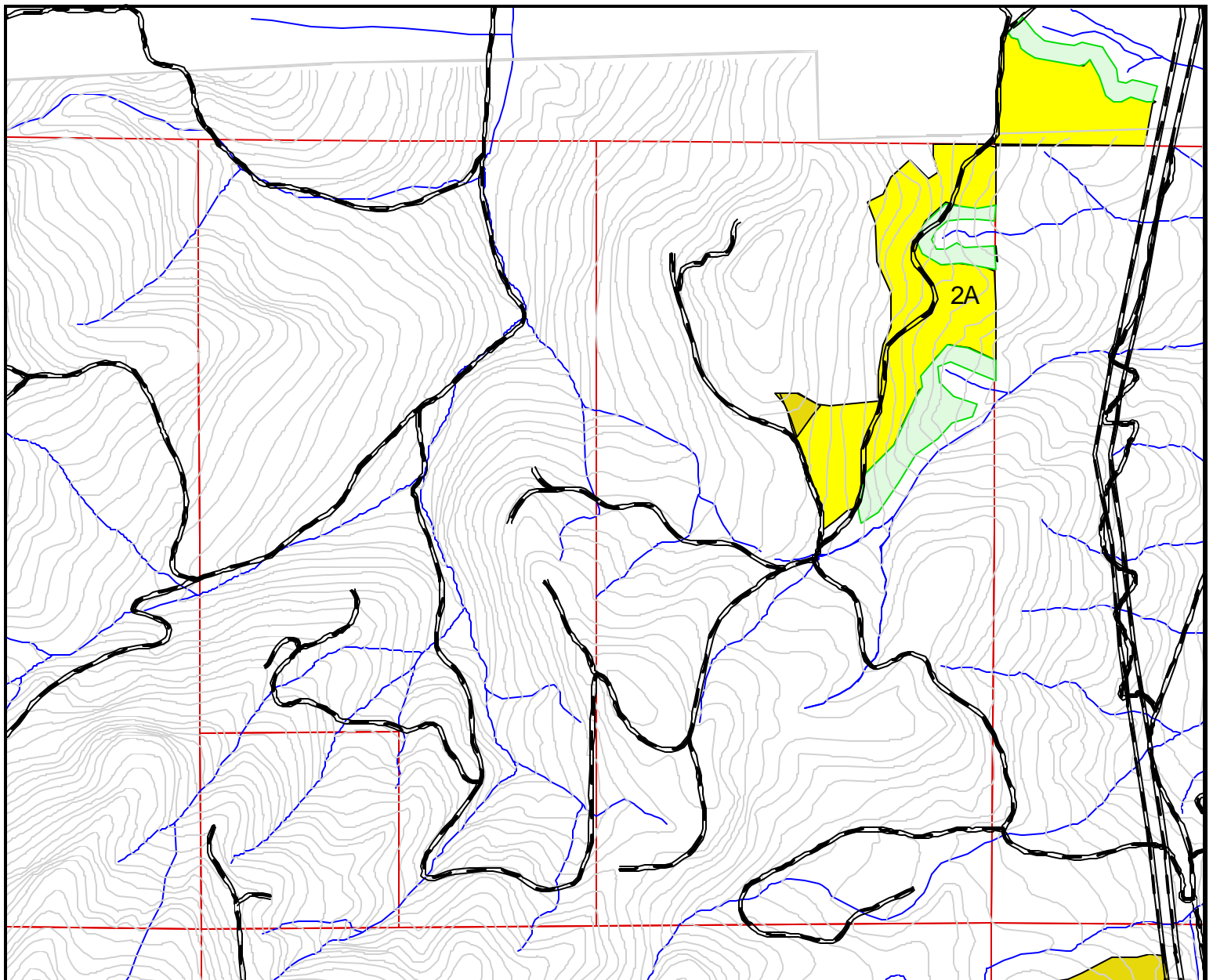


map scale 1"=1000'

- Roads
- Spurs
- Contour
- Streams
- Riparian Reserve Treatment
- Ground Based Harvest
- Treatment Area
- Section Lines

2/20/2002





Project Proposal:
 Harvest Area - 2A - 30 acres, Riparian - 9 ac.
 Total Acres 30
 Riparian Reserve Treatment 9 acres
 Approx. 2 acres ground based

Elevation range:
 980' - 1200'

Alternative III

2002 Project Area Map

Calapooya , area #2

T.15S., R.01W. Sec 05

1000 0 1000 Feet

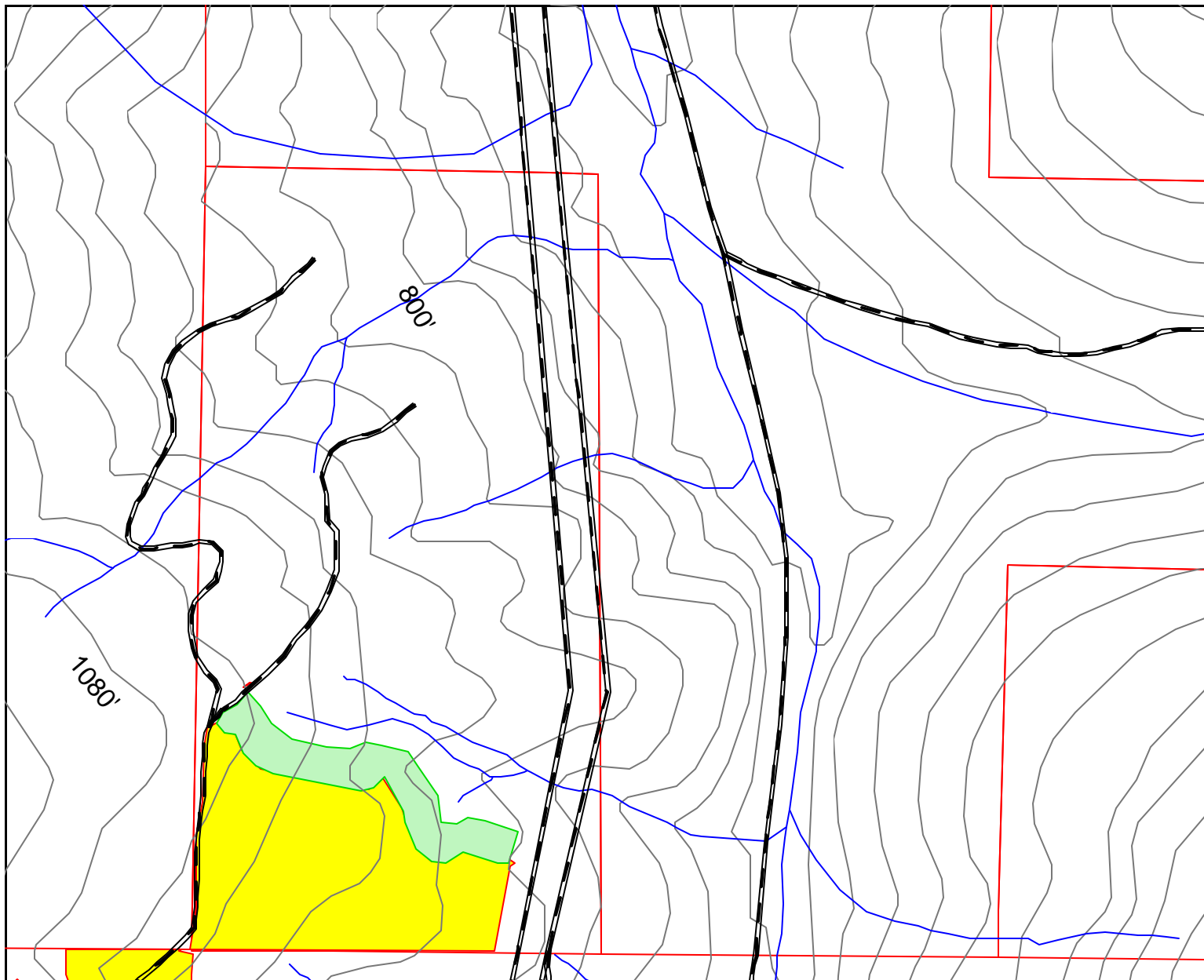


map scale 1"=1000'

- Roads
- Contour
- Streams
- Ground Based Harvest
- Riparian Reserve Treatment
- Treatment Area
- Section Lines

2/20/2002





Project Proposal: 12 acres

Riparian Reserve Treatment - 3 ac.








No ground based

Elevation range:
800' - 1080'

Proposed Action and Alternative III

2002 Project Area Map Calapooya, Area #3

T.14S., R.01W. Sec 33

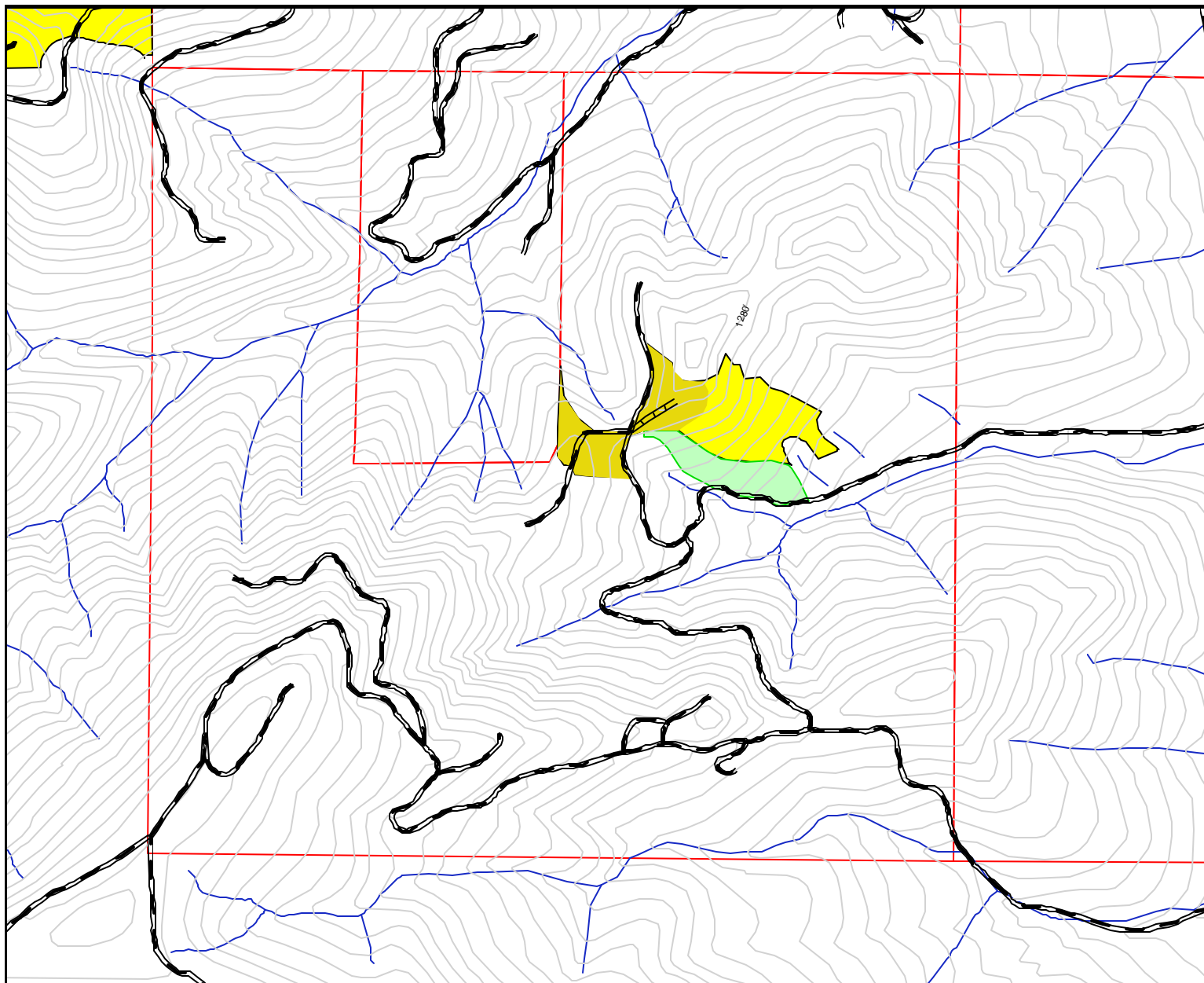
-  Roads
-  Spur
-  Streams
-  Contour - 40
-  Riparian Reserve Treatment
-  Project Area
-  Section lines

500 0 500 Feet

map scale 1" = 500'



02/21/02



Project Proposal: 16 acres
Riparian Reserve treatment 5 acres

Ground Based Harvest approx. 7 acres

Elevation range:
800' - 1320'

Proposed Action 2002 Project Area Map Calapooya, Area #4

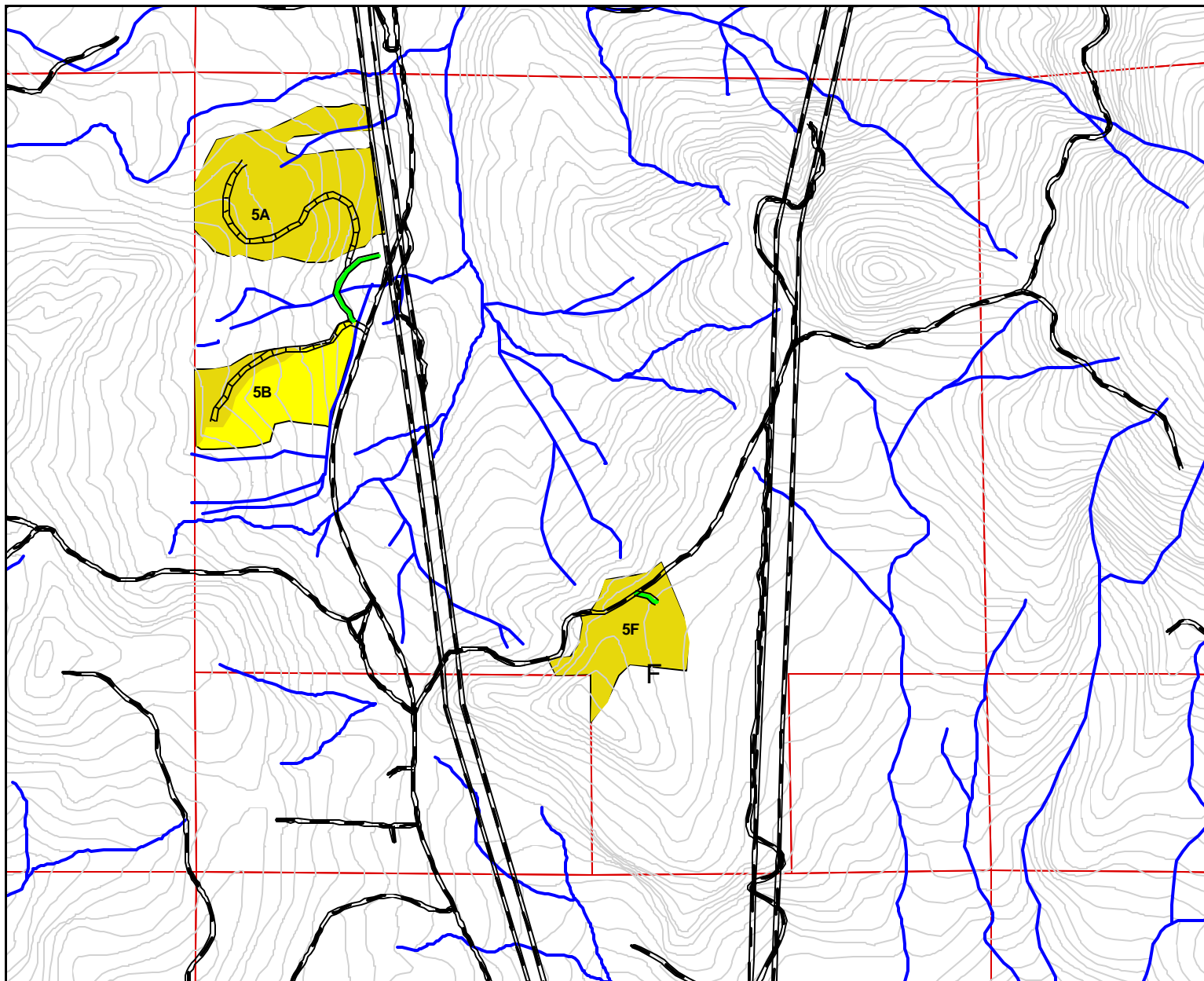
T.14S., R.01W. Sec 31

- Roads
- Spurs
- Contour -40
- Streams
- Ground Based Harvest
- Riparian Reserve Treatment
- Treatment Area
- Section lines

1000 0 1000 Feet
map scale 1"=1000'

02/21/02








Project Proposal:
 Harvest area - A - 22
 Harvest area - B - 12
 Harvest area - F - 10
 Total 44 acres

Ground based harvest approx. 36 acres

Elevation range:
 1020' - 1400'

Proposed Action 2002 Project Area Map Calapooia, Area #5

T.15S., R.01W. Sec 09

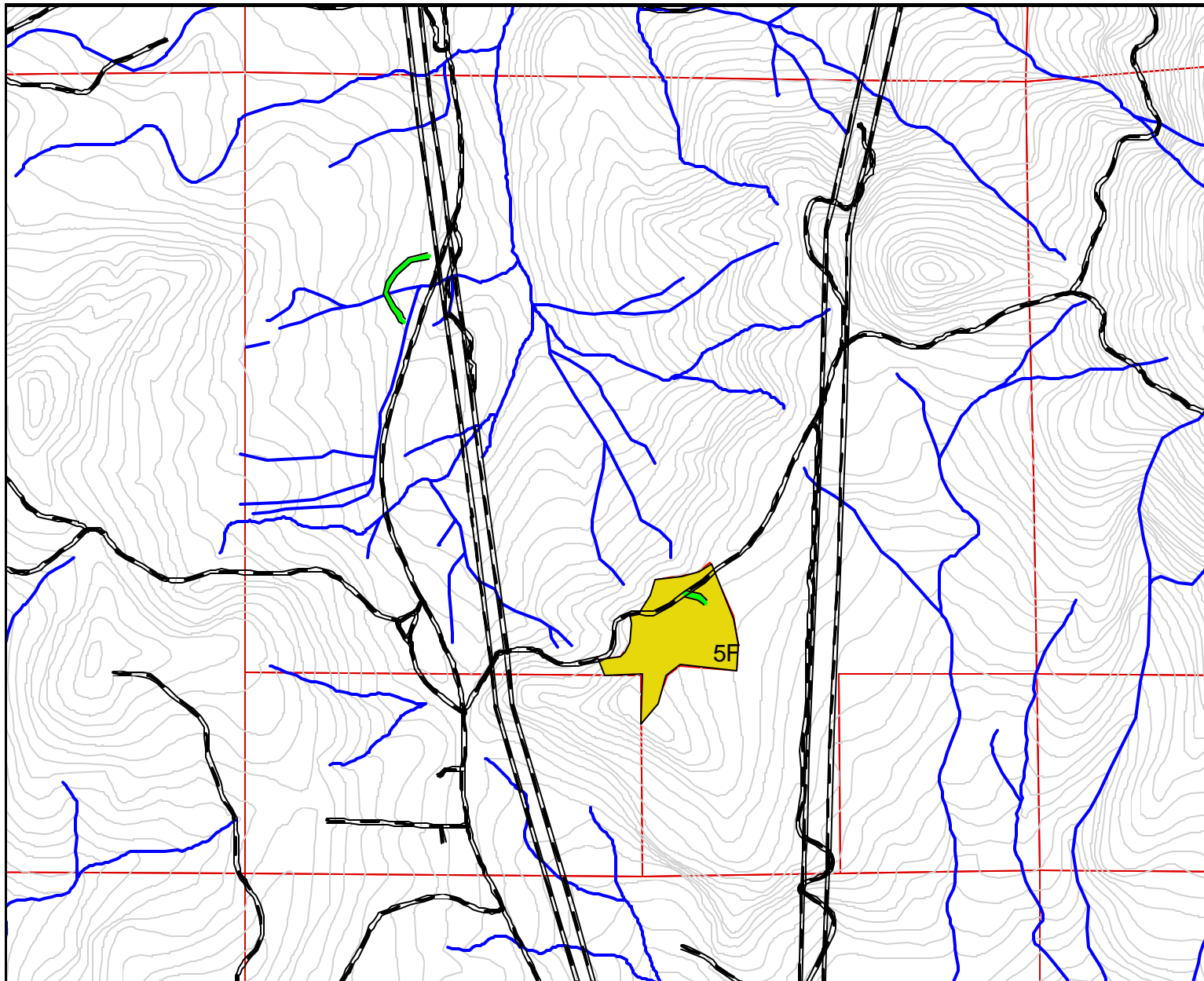
-  Roads
-  Old road
-  Spurs
-  Streams
-  Contour
-  Ground based harvest
-  Treatment Area
-  Section Lines

1000 0 1000 Feet

02/21/02

map scale 1"=1000'





Project Proposal:
Harvest Area - 5F - 10 acres

Ground based harvest 10 acres

Elevation range:
1020' - 1400'

Alternative III 2002 Project Area Map Calapooia, Area #5

T.15S., R.01W. Sec 09

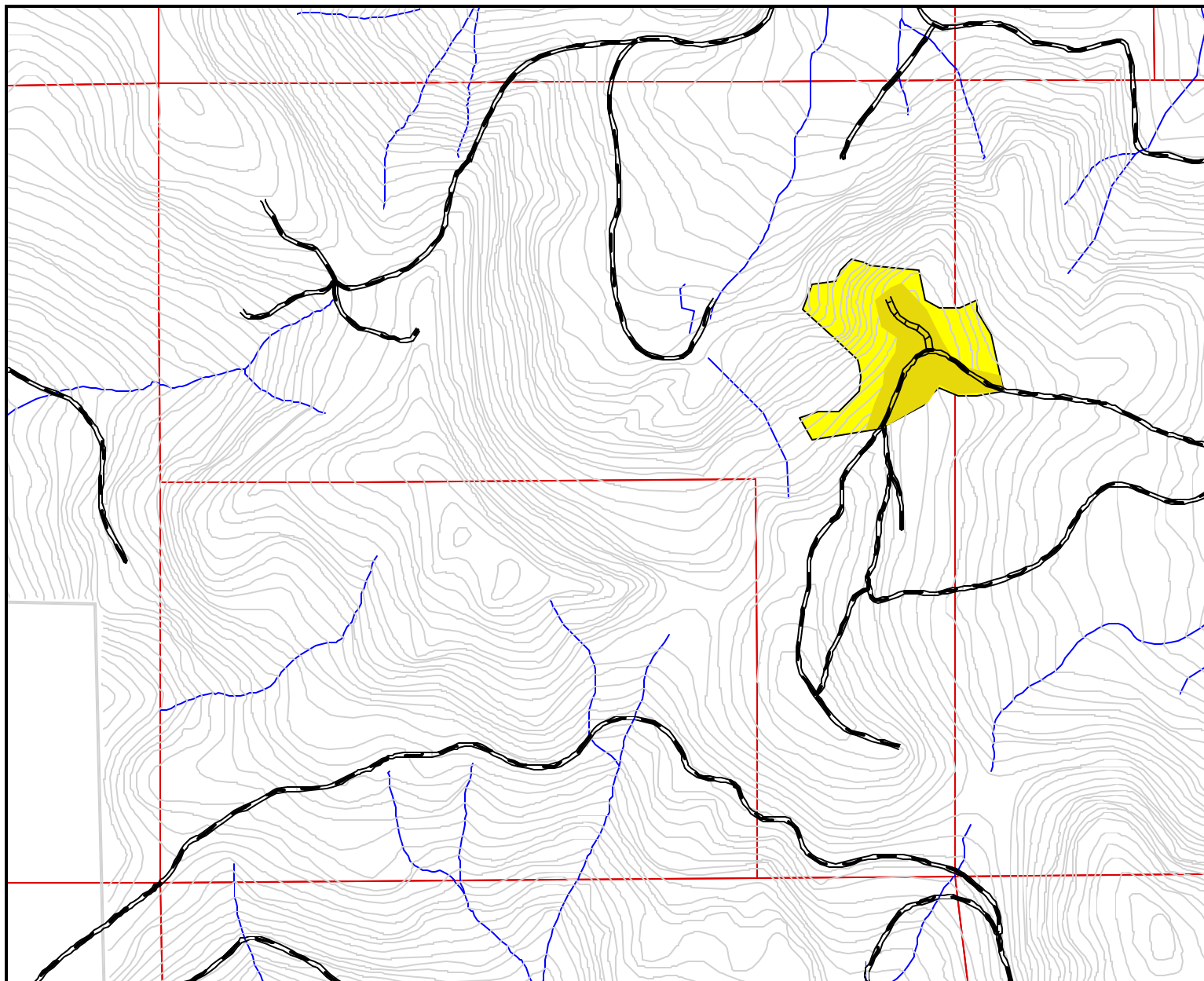
-  Roads
-  Old road
-  Streams
-  Ground Based Harvest
-  Contour
-  Treatment Area
-  Section Lines

1000 0 1000 Feet

map scale 1"=1000'

02/21/02





Project Proposal:
Harvest Area 22 acres

Ground based harvest approx 8 acres

Elevation range:
1720' - 1900'

Proposed Action 2002 Harvest Area Map Calapooia, Area #6

T.14S., R.02W. Sec 33, 34

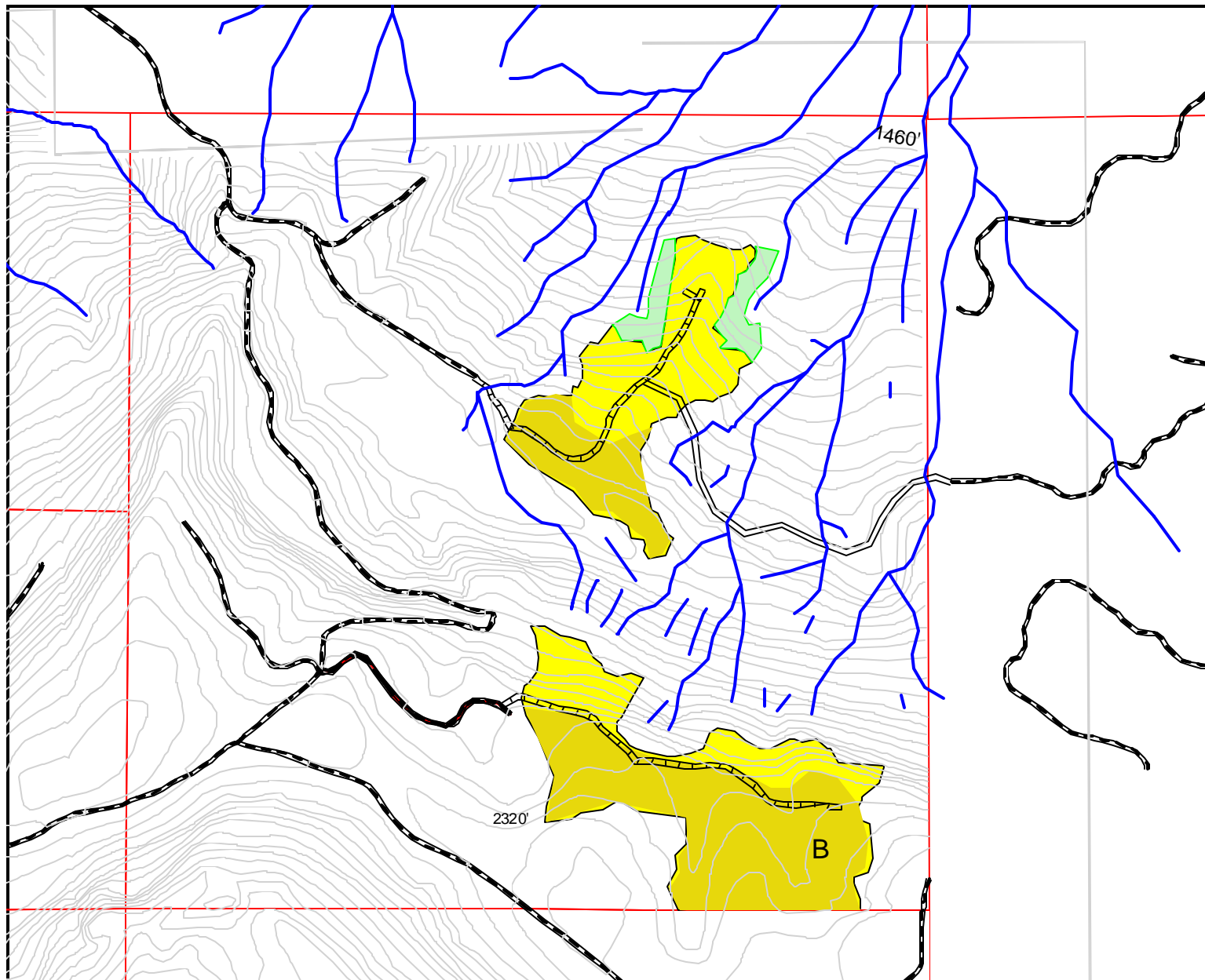
-  Roads
-  Spur
-  Ground based harvest
-  Contour
-  Streams
-  Treatment Area
-  Section Lines

1000 0 1000 Feet

map scale 1"=1000'

02/21/02





Project Proposal:
 Harvest area - A - 31 acres
 Harvest area - B - 52 acres
 Total 83 acres
 Riparian Reserve treatment 5 acres

Ground based harvest approx 46 acres

Elevation range:
 1460' - 2320'

Proposed Action 2002 Harvest Area Map Calapooia, Area #7

T.15S., R.01W. Sec 01

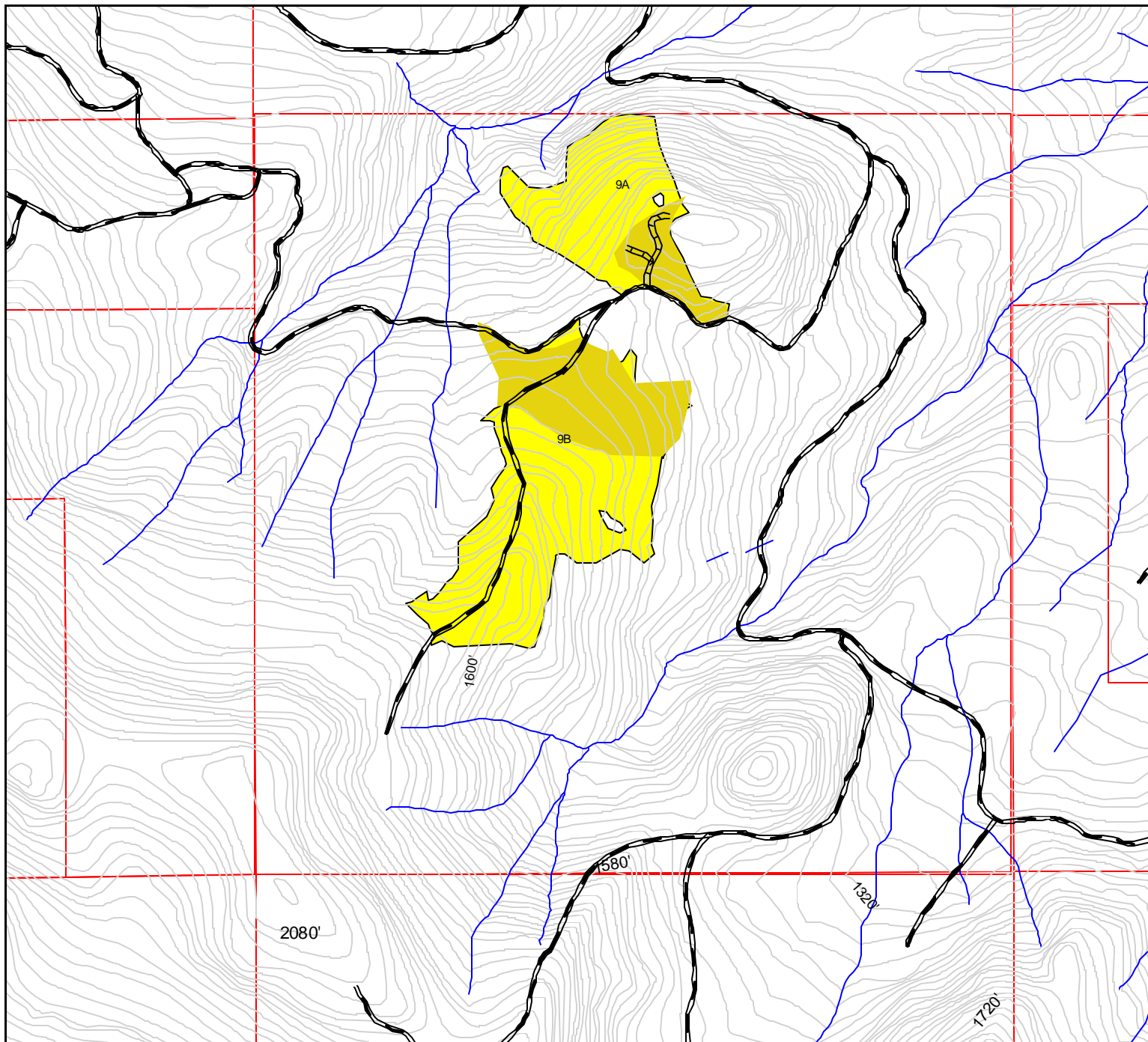
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map scale 1"=1000'

- Streams
- Contour
- Roads
- Spurs
- Old Road
- Ground Based Harvest
- Road renovation
- Riparian Reserve Treatment
- Treatment Area
- Section Lines

02/21/02












Project Proposal:
 Harvest - A - 20 acres
 Harvest - B - 39 acres
 Total - 59 acres
 Riparian Reserve Treatment 2 acres

Ground Based Area 25 acres

2002 Harvest Area Map Calapooya, Area #9

T.14S., R.02W. Sec 28

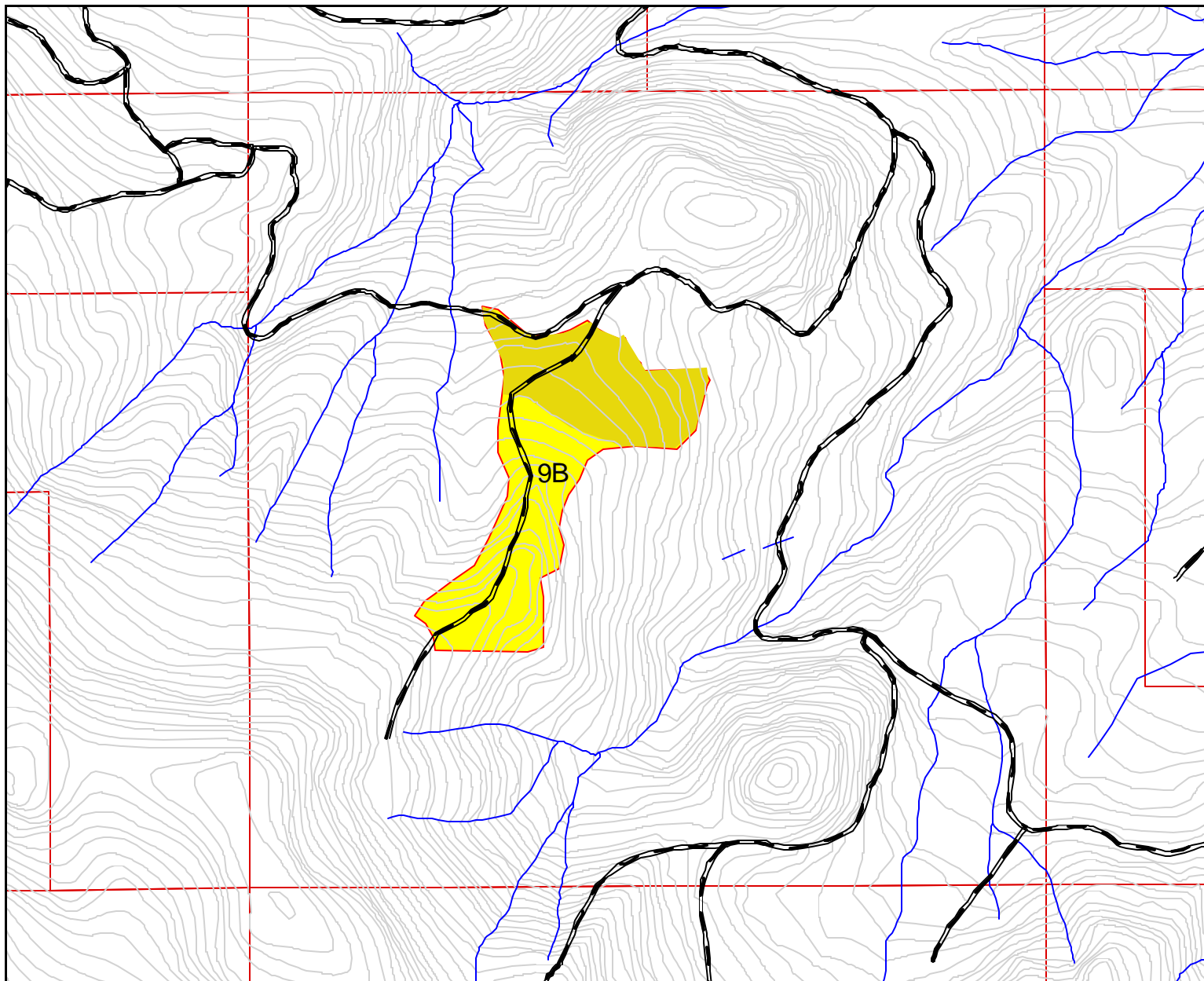
-  Roads
-  Spurs
-  Streams
-  Contour
-  Ground Based Harvest
-  Sales02_02_06.shp
-  Section lines

Elevation range:
 1220' - 1600'

1000 0 1000 Feet
 map scale 1"=1000'

02/21/02











Project Proposal:
Harvest area - 9B - 39

Ground based area approx 18 acres

Elevation range:
1220' - 1600'

-  Roads
-  Streams
-  Contour
-  Ground based harvest
-  Project Area
-  Section Lines

Alternative III

2002 Harvest Area Map Calapooya, Area #9

T.14S., R.02W. Sec 28

1000 0 1000 Feet



map scale 1"=1000'

02/21/02

